

In the Claims

1. A process for forming a multilayer composite insulator,
5 comprising:

forming an insulator precursor by orienting an insulation
insert in a desired location between a first facing layer and a layer of a
polymer based blanket material;

10 closing said insulator precursor in a molding press;

heating said insulator precursor in said molding press to a
temperature sufficiently high to soften polymer binding fiber in said layer
of polymer based blanket material and cause reshaping;

15 cooling said insulator precursor in said molding press so as to
set said insulator precursor in its molded shape and complete formation of
said insulator; and

opening said molding press and removing said insulator.

2. The process of Claim 1 further including cutting said first
facing layer, said layer of polymer based blanket material and said
20 insulation insert to desired dimensions prior to forming.

3. The process of Claim 1, wherein said heating of said
insulator precursor is to between 200-400°F.

25 4. The process of Claim 1, wherein said heating of said
insulator precursor is to between 300-375°F.

5. The process of Claim 1, including applying pressure to said
insulator precursor in said molding press at a level between approximately
0.5-1.00 psi.

precursor between approximately 10-95% when applying pressure.

8. The process of Claim 1, including orienting a second facing layer with said insulation insert, said first facing layer and said layer of a polymer based blanket material when forming said insulator precursor.

9. A process for forming a multilayer composite insulator, comprising:

forming an insulator precursor by orienting an insulation insert in a desired location between a first facing layer and a layer of a polymer based blanket material;

preheating said insulator precursor to a temperature sufficiently high to soften polymer binding fiber in said layer of polymer based blanket material;

transferring said preheated insulator precursor to a molding press while said polymer binding fibers of said layer of polymer based blanket material remain softened;

closing said insulator precursor in a ^{said} molding press;

cooling said insulator precursor on said molding press so as to set said insulator precursor in its molded shape and complete formation of said insulator; and

opening said molding press and removing said insulator.

10. The process of Claim 9 further including cutting said first facing layer, said layer of polymer based blanket material and said insulation insert to desired dimensions prior to forming.

11. The process of Claim 9, including preheating said insulator precursor to a temperature between approximately 220-425°F.

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12. The process of Claim 9, including preheating said insulator precursor to a temperature between approximately 300-375°F.

0.5-100.0 psi.

14. The process of Claim 13, wherein said pressure is applied for between substantially 5-45 seconds.

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15. The process of Claim 13, including compressing said insulator precursor between approximately 10-95% when applying pressure.

10 16. The process of Claim 9, including orienting a second facing layer with said insulation insert, said first facing layer and said layer of polymer based blanket material when forming said insulator precursor.

15 17. A process for forming a multilayer composite insulator, comprising:

15 forming an insulator precursor by orienting an insulation insert in a desired location between a first facing layer and a layer of polymer based blanket material;

20 closing said insulator precursor in a molding press and crimping at least one selected area of said insulator precursor;

20 heating said insulator precursor in said molding press to a temperature sufficiently high to soften only said polymer binding fiber in said at least one selected area of said layer of polymer based blanket material; and

25 opening said molding press and removing said insulator wherein said insulator includes said at least one selected area characterized by relatively high density and relatively increased rigidity.

18. The process of Claim 17 further including cutting said first

insulator precursor is to between 300-375°F.

21. The process of Claim 17, including applying pressure to said insulator precursor in said molding press at a level between approximately
5 0.5-100.0 psi.

22. The process of Claim 21, wherein said pressure is applied for between substantially 5-45 seconds.

10 23. The process of Claim 21, including compressing said insulator precursor between approximately 10-95% when applying pressure.

15 24. The process of Claim 17, including orienting a second facing layer with said insulation insert, said first facing layer and said layer of polymer based blanket material when forming said insulator precursor.

25. A process of molding a panel from a polymer based blanket material, comprising:

20 molding said polymer based blanket material into a desired shape for said panel by crimping at least one selected area characterized by a relatively high density and a relatively increased rigidity.

25 26. The process of Claim 25, wherein said molding includes heating said polymer based blanket material to a temperature sufficiently high to soften polymer binding fiber in said at least one selected area of said polymer based blanket material and applying pressure sufficient to form said polymer based blanket material into a desired panel shape.

30 27. The process of Claim 26, wherein said heating of said insulator precursor is to between 200-400°F.

28. The process of Claim 26, wherein said heating of said insulator precursor is to between 300-375°F.

29. The process of Claim 26, wherein said pressure is applied at

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a level between approximately 0.5-100.0 psi.

30. The process of Claim 29, wherein said pressure is applied for between substantially 5-45 seconds.

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31. The process of Claim 29, including compressing said insulator precursor between approximately 10-95% when applying pressure.

10 32. The process of Claim 25, including providing said at least one selected area as a rib across said panel.

33. The process of Claim 25, including providing said at least one selected area as an edge of said panel.